

British Antarctic Survey Fieldwork 2005-2006

Programme: **GEACEP** (*Greenhouse to Ice-house Evolution of the Antarctic Cryosphere & Palaeoenvironment*)

Project: **ISODYN** (*Ice-House Earth: Stability or Dynamism*)

Ice-House Earth: Stability or Dynamism? (ISODYN).

Location: James Ross Island (64°09'S, 57°45'W).

Personnel: Dr Anna Nelson (BAS) and 1 field assistant (BAS), plus Professor Mike Hambrey (University of Wales at Aberystwyth).

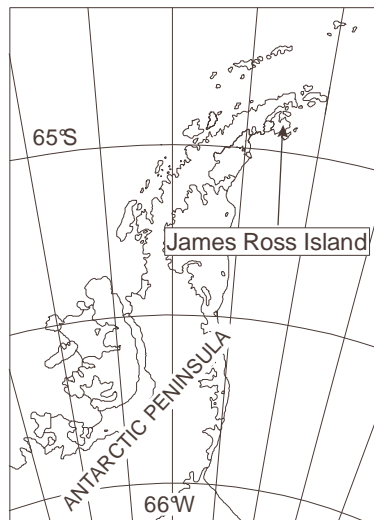
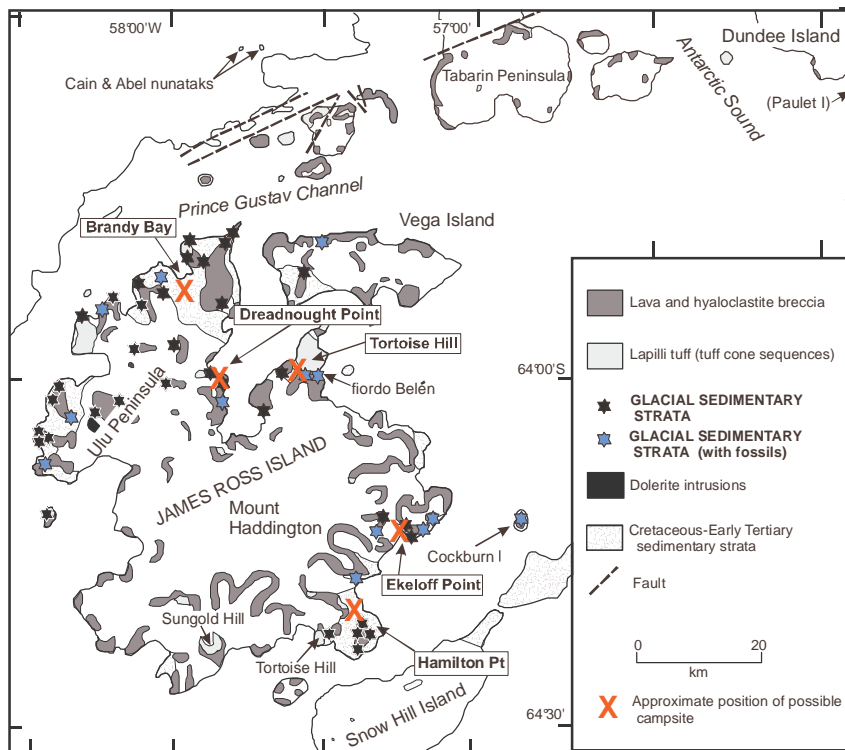
Dates: January—March, 2006.

Objectives of project: To map, describe, sample and photograph glacial sedimentary sequences and associated fossils on James Ross Island. The rock and fossil samples will be analysed to create realistic environmental reconstructions and new data on environmental change, particularly Antarctic ice sheet history, over the past 7-10 million years. Particular foci of the work are to identify the source region(s) and thermal regime(s) of former ice sheet(s), to document any significant impact caused by the so-called “warm Pliocene” interval (the period between 3 and 5 million years ago), and to identify and date periods of significantly reduced ice cover (so-called “interglacials”). The warm Pliocene period is the closest analogue for Earth conditions that we are likely to experience in the next 100 years. The new information obtained from this project will be used as critical input to climate models identifying how global change will occur throughout the next 300 yrs.

Logistics:

- All field support will be by helicopter from HMS *Endurance* (HMSE), because of the likely presence of persistent and possibly extensive pack ice surrounding James Ross Island.
- The support by HMSE will comprise campsite inputs, away-days and final extraction of the field party and all campsite equipment (including boxes of rocks & fossils) from James Ross Island. Periods of close-ship helicopter (helo) support will be used to enable personnel to visit geographically scattered localities mainly on James Ross Island, but also Vega and Cockburn islands.
- Target areas for helo away days will be determined prior to fieldwork but will be prioritised mainly during the season and may depend on local factors.

JL Smellie



Geological sketch map of James Ross Island, its location in the Antarctic Peninsula, and positions of localities provisionally selected for campsites. Many of the asterisked glacial sedimentary outcrops are potential sites for helo away days. **NOTE: campsites and potential away day sites for visits during TWO field seasons.**

[Targets may change between field seasons depending on results obtained]

J. Smellie, 14 June 2005